

# The Trend of Public Spending and its Impact on Some Macroeconomic Variables in Iraq

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## ABSTRACT

The research investigates the trend of containing the impact of external economic shocks on some of the financial variables in countries exporting primary commodities, especially oil – and Iraq is selected as the sample in this research. The purpose of this research is to predict the role of fiscal policy in the context of the impact of external economic shocks on macroeconomic variables. The research adopts the standard methodology of the Vector Error Correction Model test to find the co-integration of the public spending model. The results of the study reveal that a shock in public spending leads to an increase in money supply, inflation and aggregate consumption. The conclusion indicates that there is an equilibrium relationship between the variables of the model (money supply, inflation rate, total consumption, the dummy variable, and government spending). The research's main recommendation include the diversification of the base of the Iraqi economy and create an economy characterized by a gradual increase in the contribution to other economic sectors. This contributes to the formation of the gross domestic product and the diversification of the structure of public revenues. It also prepares for the change of the Iraqi economy from the rentier economy into the market economy. The aim of the research is to reach findings that prevent the Iraqi economy and the public budget from sudden fluctuations in oil revenues.

**Keywords:** public spending; macroeconomic variables; economic shocks; oil countries; Iraq

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## INTRODUCTION

Financial policy is one of the most important economic policies directed at economic activity in developing and developed countries and facing the shocks and crises of the economy by addressing the causes of these shocks. The fiscal policy of Iraq was an important factor in facing the economic crises during the duration of economic sanctions and the shock of the deterioration of public revenues. The fiscal policy was the reason to force the financial authority to adopt the style of cheap criticism in the management of the crisis, which reflected negatively on price levels and inflation [1]. As the economic system in Iraq changed into a market economy and a significant increase in the volume of imports after 2003, the economic policies did not consider accurate diagnosis for the economic situation in Iraq. Moreover, the possibility of achieving growth and solving structural imbalance were not taken into consideration, therefore the policies failed to solve the deteriorating situation of Iraq's economy despite the large financial spending.

The importance of research is highlighted by the importance of fiscal policy spending in Iraq and its impact on the economic activities. Therefore, exposure to any external shocks will move its impact to macroeconomic variables. In light of the deterioration of the Iraqi economy that is exposed external shocks, the problem stems from the weak ability of the Iraqi economy to cope with the crises due to the dependence on oil as a primary source of revenue. The study seeks for the role of fiscal policy in facing the impact of external economic shocks on macroeconomic variables. The research hypothesizes that Iraq's fiscal policy plays an important role in containing the impact of external economic shocks.

The research was based on the use of the descriptive approach and quantitative analysis of standard tests using the Eviews9 program.

## LITERATURE REVIEW

Addressing the details of the course of the policy of spending in Iraq leads to the fact that it is weak in its ability to cope with the periodic

economic fluctuations that the economy suffers from time to time resulting from the fluctuation of public revenues, because of the sustainability of its work under the umbrella of external rents derived from oil revenues [2]. The realization of its spending programs depends on the growth of oil revenues. The policy of spending during the study period has faced a number of challenges as a result of the conditions witnessed by the Iraqi economy, which varied between wars and economic sanctions that clearly affected the entire economic, political and social life. We will discuss in detail the reality of the policy of spending in the Iraqi economy during two different time periods [3].

The Iraqi economy suffers the mistakes of Iraqi politics over the past decades as it faced two destructive wars and economic sanctions that have been extended since the 6th of August 1990. This situation led to facing difficult economic and political conditions that have been unprecedented and have exacerbated the problems of the Iraqi economy under the economic sanctions. The budget was deprived (85%) of the traditional sources of funding that were generated by oil revenues during the first five years of economic sanctions. The result seemed to be either directly destruction of the structures of the economy and infrastructure and loss of opportunities for growth and development, including impeding the development of the oil sector itself. Accompanied by the decline of oil production significantly, oil production reached (0.5) million barrels after the previous production of (3.3) million barrels per day [4].

Table 1 indicate that public spending in 1991 declined to (17497) million Iraqi dinars after it was (141 791) million Iraqi dinars in 1990, with a negative growth rate of (−87.66%) at current prices and (−85.51%) in prices. Due to the severe shortage of public revenues caused by the interruption of oil exports, in 1992, the economy witnessed an increase in public spending to meet reconstruction and support spendings, which were mainly focused on stimulating agricultural production, the expansion of spending was accompanied by increased reliance on the cash issuance to finance

this spending, the public spending increased significantly at current prices to reach (32 883) million Iraqi dinars with an annual growth rate of (87.93%), while the rate of growth at constant prices (−10.50%), which represents the real increase in public spending, the percentage (87.93%) is an apparent increase due to high inflation rates resulting from financing deficit.

The increase of the public spending policy for the years 1993–1994 continued in the form of (1) with a high growth rate of (109.69%) and (108.23%), respectively. The increase was concentrated in support of the agricultural sector in order to cover the need of the local market of agricultural crops after the import stopped. The increase was financed by the excess of the new monetary issue, which was the main reason for the increase in inflation, and this reflected negative growth rates in public spending at constant prices (−80.18%) in 1995.

In 1996, public spending at current prices decreased by 542 542 million Iraqi dinars, after it was (690 784) million Iraqi dinars in 1995. A negative growth rate of (−2.45%) was marked due to the memorandum of understanding that forced Iraq to export oil in limited quantities, and achieve a sufficient amount of revenue to cover part of the country's needs of food and medicine, which alleviated the pressure on the public budget (Fig. 1) [5].

Although most of the failures faced by the Iraqi economy resulted from the imposition of sanctions 1990–2003. But part of them resulted from the failure of economic policy to achieve the target rates of growth and diversification of the structure of GDP during the post-economic sanctions, because of the relative distribution of spending on the operational side, which was accompanied by the dominance of the political decision on the economic decision and the absurdity of decisions, and the arbitrary management practices of oil wealth [6].

### SPENDING POLICY DIRECTIONS FOR THE PERIOD 2003–2014

Iraq has undergone many political and economic transformations. As with other economic policies,

Table 1

## The Evolution of Public Spending in the Iraqi Economy for the Period 1990–2002 (Million Iraqi Dinars)

Year	Public spending at current prices	Public spending at constant prices 2007 = 100	Annual growth rate of public spending, %	Annual growth rate of general spending, % (fixed prices)	The new cash version million Iraqi dinars	Ratio of new cash issue to public spending
1990	141791	12078541.6	–	–	–	–
1991	17497	1749700	–87.66	–85.51	22957	131.2
1992	32883	1565857.1	87.93	–10.5	39848	121.18
1993	68954	232952.7	109.69	–85.12	68892	99.91
1994	199442	18933.17	189.23	–91.87	209753	105.16
1995	690784	3751.4	246.35	–80.18	619906	89.739
1996	542542	4986.13	–21.46	32.91	910171	167.76
1997	605802	3612.54	11.65	–27.54	976043	161.11
1998	920501	4337.48	51.94	20.06	1225068	133.08
1999	1033552	4230.03	12.28	–2.47	1346955	130.32
2000	1498700	5009.86	45	18.43	1521884	101.54
2001	2079727	5960.85	38.76	18.98	1891210	90.93
2002	2518285	5985.16	21.08	0.4	2700346	107.22

Source: Central Bank of Iraq, Directorate General of Statistics and Research, Statistical Group, 2003, special issue, and the annual bulletin, for the years (2003–2014). URL: <https://cbiraq.org/SeriesChart.aspx?TseriesID=184> (accessed on 20.05.2022).

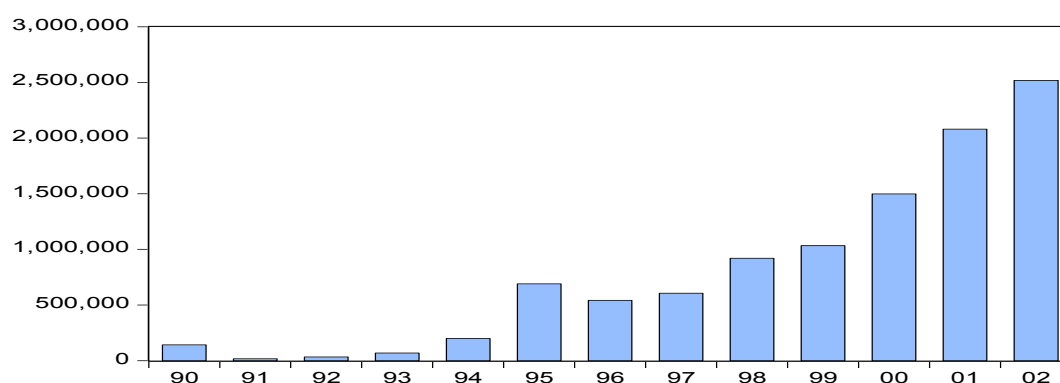


Fig. 1. Evolution of Public Spending for the Period 1990–2002

Source: Prepared by researchers based on the outputs of the E\_VEIWES-10 program.

the fiscal policy has been subject to a series of updates in its legal aspect in line with the current economic situation. We will review the most important legal updates on financial policy [7].

Issuing the Public Debt Management Law No. 94 of 2004, which includes instructions to sell government securities according to the market

mechanism, and the Central Bank to act as the financial agent for the Ministry of Finance in the management of short-term treasury transfers instead of the cheap monetary policy and the syndicated loan, the implementation of this strategy is likely to improve the chances of growth and economic stability by controlling the rates

Table 2

**Evolution of the Volume of Public Spending in the Iraqi Economy for the Period 2003–2014  
(Million Iraqi Dinars)**

Years	Public spending at current prices	Public spending at constant prices 2007 = 100	Annual growth rate at current prices, %	Percentage of operating spending to public spending	Ratio of investment spending to public spending
2003	4901961	8822.32	–	90	10
2004	32117491	59598.99	555.19	84.8	15.2
2005	26375175	41974.09	–17.87	79.7	20.3
2006	38806679	35782.59	47.13	82.5	17.5
2007	39031232	39031232	0.57	67.1	32.9
2008	59403375	43814.87	52.19	53.9	46.1
2009	65658000	45494.04	10.52	72.2	27.8
2010	83823000	57108.07	27.66	66.5	33.5
2011	9662767	49849.49	15.31	61	39
2012	105139567	60864.88	8.76	69.1	30.9
2013	106873027	61853.75	1.64	62.5	37.5
2014	83556226	52481.5	–21.81	60.16	29.83
2015	80437641	49985.68	–2.77	60.42	29.8
2016	80538634	50427.93	–0.98	61.71	30.43

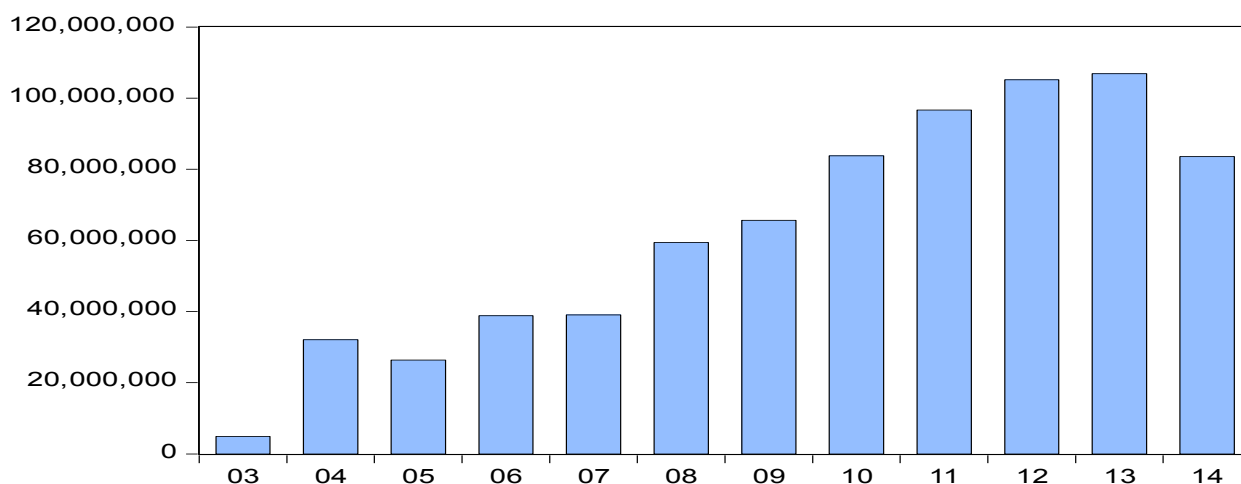
Source: Central Bank of Iraq, Directorate General of Statistics and Research, Statistical Group, 2003, special issue, and the annual bulletin, for the years (2003–2014). URL: <https://cbiraq.org/SeriesChart.aspx?TseriesID=184> (accessed on 20.05.2022).

of inflation, containing cash, and controlling the levels and use of inflows in order to fill the budget deficit [8, 9].

Issuing the orders of the occupation authority (37, 49 and 84) concerning the amendments to the tax policy, as these orders referred to the reduction of the tax rates on the incomes of individuals and the profits of companies, where more tax exemptions on the income contained in items (1), (5) of Article (12) of the Income Tax Law No. 113 of 1982 and subordination of public sector employees to bear the tax burden To ensure that sufficient tax revenues are collected without the other categories of society being burdened by customs tax rates [10]. The spending policy after 2003 was characterized by expansion due to the large increase in oil revenues, the impact of the

end of the economic sanctions, which coincided with the rise in oil prices. The increase of public spending is seen as the mainstay of economic reform policies aimed at restructuring the Iraqi economy, as well as considered a national goal to improve the standard of living of citizens through increasing wages and salaries, and expand the umbrella of social welfare. Expanding the base of support for basic commodities, confronting the remaining repercussions of the recent war and the accompanying acts of sabotage and abuses on public and private property, and the impact on economic and development security in the country [11].

Public spending on current prices increased in 2004 to reach (321 174 91) million Iraqi dinars, as well as fixed prices reaching (595 98.99) million



**Fig. 2. Evolution of Public Spending for the Period 2003–2014**

Source: Prepared by researchers based on the outputs of the E\_VEIWES-10 program.

Iraqi dinars (8822.32) in 2003. *Table 2* shows evolution of the volume of public spending in the Iraqi economy for the period 2003–2014. The increase was due to the change in the salaries and allowances of public sector employees as well as the increase in security and military spending due to the deteriorating security situation. The expansionary policy continued to move forward (2005–2008) to the highest level in 2008 (*Fig. 2*). The impact of the rise in international oil prices due to the increase in demand for crude oil, and the as well as the rise in global growth rates, increased the public spending. The increase of public spending marked an increase in the volume of operating spending due to the large size of the public sector on the one hand, and the strong dependence of the Iraqi economy on oil revenues in financing the government's programs and plans on the other hand. In addition, the political and social conditions exerted pressure on the Iraqi government to expand employment. The whole to a government economy with excellence. In light of the lack of opportunity for the private sector to take over the management of the economy for security and political reasons and the absence of legal and institutional cover that drives the development of the private sector, which has lost the ability to provide real jobs able to absorb the surplus workforce in the economy. The expansionary trend of the policy of spending during this phase justified Iraq's reconstruction and sustainable development

in all economic sectors, aiming at restructuring the Iraqi economy and trying to repair structural imbalances. However, the policy of reconstruction of the Iraqi economy is determined by following up the evolution of operational and investment spending to public spending [12].

The expansionary policy of 2010–2013, as shown in *Fig. 2*, continued because of the increasing spending on the military and police forces to maintain the stability and security of the country and the infrastructure, and the education and health sectors, as policy focused on the spending power of the number of foundations and principles that reflect the priorities as follows:

a. To give priority to the security area by improving capabilities in the areas of security and national defense.

b. Improving the capabilities of oil sector projects, electric power, various services and infrastructure, and working to absorb unemployment through the development of sectors and activities, capacity building, and continuing employment in the public sector [13].

In 2014, public spending fell by a negative growth rate of –27.90% in current and investment volumes due to the drop in oil prices in world markets, which marked an increase in military spending due to recent developments in the unstable political arena. Based on the above, the policy of the expansionary spending policy after 2003, which is clearly in line with the economic

Table 3

**Joint Integration Testing (Juselius-Johansen) for the General Spending Model  
for the Period 1990–2014**

Critical value	Statistic value	Prob.	Alternative Hypothesis	The null hypothesis	The decision
<b>Trace Test</b>					
47.85613	79.80872	0.0000	R = 0 R > 1	R = 1 R = 0	Denotes rejection of the hypothesis at the 0.05 level
29.79707	40.01713	0.0024			
15.49471	16.12473	0.0402			
3.841466	6.104816	0.0135			
<b>Maximum</b>					
27.58434	39.79159	0.0008	R = 0 R > 1	R = 1 R = 0	Denotes rejection of the hypothesis at the 0.05 level
21.13162	23.89240	0.0199			
14.26460	10.01991	0.2106			
3.841466	6.104816	0.0135			

Source: Prepared by researchers based on the outputs of the E\_VEIWES-10 program.

cycles, can be determined as a result of the repeated political pressure to divert the large oil revenues resulting from the rise in world oil prices without taking into account the volatility of short-term oil prices and the decrease in potential oil revenues, which means that the performance of the economy depends on external factors and remains vulnerable to external shocks, and that any fluctuations in oil prices will cause real confusion in the management of the economy and the policy of spending, which is to be very ambitious commensurate with the large volume of revenue achieved before the oil shocks.

### PUBLIC SPENDING MODEL

After getting the time series dormancy and making sure most of the variables used in the study are in the first difference, we can use the combined integration test to test for a long-term equilibrium relationship between the model variables.

The Unit Root Test for the time series (Dickey-Fuller Augmented) and the Phillips-Perron test for most of the variables of the public spending model proved to be static in the first difference, they are integrated from the first class (1) ~ 1.

This means that the time series of the variables under study are integrated from the same degree, indicating the possibility of a common integration relationship between government spending and

the supply of cash, inflation, consumption, the common integration of the variables of the public spending model will be selected using the Johansen-juselius1990 method, which is one of the best methods used for estimating the trend of joint integration and confirming its uniqueness based on the trace test and the Maximum Eigenvalues test (max) Which show the existence of a long-term equilibrium relationship between the economic variables of the study sample [14] and the results as shown in *Table 3*.

After conducting a test of common integration between the variables, it was found that there are a number of vectors of common integration between these variables. Table 3 shows that the impact test results (trace) reached 79.80, which is greater than the critical value of 47.85. Value, the prop of 0.0000 is less than (5%), which means rejecting the null hypothesis and accepting the alternative assumption  $R > 1$  that there are four vectors of common integration vectors and that the equation is integral.

A statistic (maximum eigen value) indicates that the statistical value of (39.79). It is greater than the critical value of (27.58) and the value of probability (prob = 0.0008) which is smaller than (5%). This results in rejecting the null hypothesis ( $r = 0$ ) on one hand, and approving the alternative hypothesis: there is co-integration relationship and that the equation is integrated, indicating

The Number of Delays for the Public Spending Model for the Period 1990–2014

Lag	AIC	SC	HQ
0	92.32647	92.52543	92.36965
1	88.50902*	89.50380*	88.72491*
2	88.87782	90.66843	89.26643
3	89.20026	91.78670	89.76159

Source: Prepared by researchers based on the outputs of the E\_VEIWES-10 program.

that there is a long-term equilibrium relationship between the variables of the study and that they are going in the same direction in the long term, although there are some deviations in the short term. Based on the results of the joint integration test, the VECM error vector model will be adopted.

#### THE SUSTAINABLE DEVELOPMENT IN BANK RESULTS OF THE TESTS TO DETERMINE THE OPTIMAL DELAY PERIOD FOR THE ERROR CORRECTION VECTOR MODEL

The results of the three tests (AIC, HQ, SC), which were used to determine the optimal delay period for the best estimate of the error correction vector model (*Table 4*), show that this period is the first period and all the variables because the value is lower than the other values in the tests. The sample will be used in the estimation of this model, which means that the error correction vector model, which will be used to detect the direction of the relationship between the variables under consideration, will include one delay period.

#### RESULTS OF VECM MODEL ESTIMATION OF THE PUBLIC SPENDING MOD

*Table 5* shows that the changes in public spending help explain the changes in variables (M, INF, TC) and the dummy variable (DV). The Prob (F-statistic) calculated value is (0.0057), which is statistically significant at the level of significance (5%). *Table 5* indicates the extent to which the random error limit of changes in the economic variables of the sample of the study was correct. The error correction factor (c1) in the public spending model was

0.489665 – negative and significance, P-value (0.0004), which is less than 5%, is significant, this indicates the long-term equilibrium relationship between the variables of the model, the supply of the money, the rate of inflation and total consumption, the imaginary variable, and the variable government spending, which was characterized by the loss of oil revenues, or during the period following the end of economic sanctions, which was characterized by the constant dependence on oil revenues as a semi-sole source of public revenues, and the value of error correction factor (ECM) (48%) Per year which is fairly acceptable speed.

It also notes the significance of the Dummy variable, which confirms the importance of introducing this variable, which means a significant shift in government spending after the change in the political system in 2003, which increased by (16730639) million Iraqi dinars, which is a very large rise, and this is due to the increase of spending policy after the lifting of economic sanctions and increased production and export of oil, which resulted in an increase in salaries and wages that accompanied the expansion in public employment as well as the large spending on the security side.

The correlation coefficient reached 64% and the probability was 50%. Accordingly, the independent variables explain 50% of the changes in the independent variable, although low is normal in such models because it excludes the general trend of the variables. Furthermore, the value of F also showed a significant P-value (0.0057), which is less than (5%), which indicates the significance of the model as a whole.

Table 5

**Results of Estimation of Error Correction Factor for the Public Spending Model  
for the Period (1990–2014)**

Nomination	Coefficient	Std. Error	t-Statistic	Prob.
C(1)	-0.489665	0.108549	-4.510991	0.0004
C(2)	-0.142259	0.239739	-0.59339	0.5612
C(3)	3.18915	0.969839	3.288329	0.0046
C(4)	4037.796	16507.01	0.244611	0.8099
C(5)	0.385159	0.100521	3.831637	0.0015
C(6)	-17223622	4662912	-3.693748	0.002
C(7)	16730639	5661670	2.955071	0.0093
R-squared	0.641462	Mean dependent var		3632119
Adjusted R-squared	0.50701	S.D. dependent var		12167913
S.E. of regression	8543488	Akaike info criterion		35.00503
Sum squared resid	1.17E+15	Schwarz criterion		35.35061
Log likelihood	-395.5578	Hannan-Quinn criter.		35.09194
F-statistic	4.77094	Durbin-Watson stat		2.382799
Prob(F-statistic)	0.00572	-		-

Source: Prepared by researchers based on the outputs of the E\_VIEWS-10 program.

### IMPULSE FUNCTIONS ANALYSIS OF THE PUBLIC SPENDING MODEL

According to the estimates of the 25-year response function shown in Fig. 3, a shock of one standard deviation in public spending will have a positive effect on the same variable (public spending) and other independent variables. A standard one and the same public spending response to shock will always be positive but tend to decline in the first period and rise slightly in the second period to settle in the third period.

The response of public spending to the shock of one standard deviation in the money supply (monetary shock) will be positive, and the public spending keeps increasing until the end of the researched period. The impact of money supply on public spending is affected by the effect of money supply at the general level of prices. The rise in prices resulting from the increase in money supply will inevitably lead to increased spending.

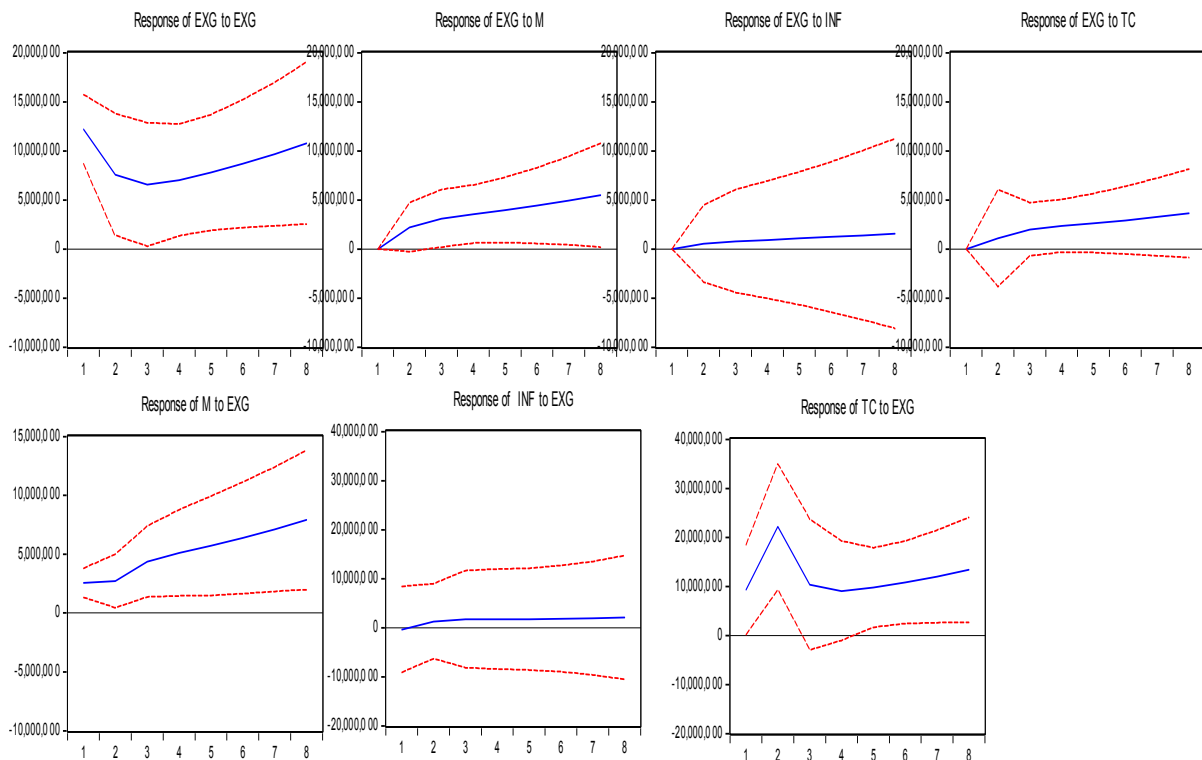
The public spending response to the shock of one standard deviation in inflation rates is negative and undervalued. This is logical, as high inflation leads to a reduction in spending in the initial period to absorb the shock. The public spending

response to a shock of one standard deviation in total consumption is positive and increasing in the first period and continues up to the end of the term.

A shock in public spending will result in one standard deviation, a positive and increasing response by the money supply from the first period and continuing to the end of the period, due to the strong rent of the Iraqi economy, which made the money supply one of the variables of fiscal policy. The government's demand for local currency to cover its internal expenses and monetary policy has become constrained by fiscal policy through public spending and its components.

The large dependence on oil revenues will contribute to the financing of government spending and the rentier aspect of the economy. Until fiscal policy has an important role in determining the course of macroeconomic variables, including the price level, the occurrence of a shock by one standard deviation in public spending will generate inflationary pressures in the first period. As the growth activity without an appropriate response to the local production apparatus due to the low productivity growth of the commodity and service sectors and open





**Fig. 3. The Response of All Variables to the Shock of one Standard Deviation in the Same Public Spending and other Variables**

Source: Prepared by researchers based on the outputs of the E\_VIEWS-10 program.

door policy; Iraqi economy policy of dumping or the policy of impoverishment of the local Iraqi industry and thus create weakness in the industrial and agricultural structure of the Iraqi economy. And the effect of the multiplier in stimulating and increasing production from within the Iraqi economy to work in stimulating the production and income in other countries supplying goods to Iraq, all of this has necessarily become the driving force for the growth of inflationary pressures and trends in the Iraqi economy. Inflation rates continue to rise to the third period, with some stability to the end of the period. The increase of the total consumption starts with the first period and then decreases in the second period to see an increase in the third period, so the increase continues to the end of the period. This reflects the policy directions of the expansionary agreement by favoring consumption over production and investment. To create new resources for the public budget by investing the surplus financial surpluses of oil exports during the period of external supply

shock to be used in the period of negative external supply shock.

## RESULTS

The fiscal policy in Iraq plays a crucial role as the main instrument through which the country's oil wealth is transferred to economic results and distributed to benefit the population. A positive shock in public spending will contribute to creating a positive shock in inflation rates, which is the case of the Iraqi economy during the study period. Results of the test of Dicky Fuller developer Vibbles-Peron (P-P) indicate that most of the variables are not static in the general level, and after considering the first difference of those variables, they proved to be static and free from the root of the unit at the first difference. Joint integration tests in accordance with the Johansson-Jeslius methodology, based on the trace test and the max-value test, indicate that there is more than one vector of integration in the public spending model, which means a long-term equilibrium

relationship between model variables, while proving the test of joint integration indicates that there is no vector of common integration in the general revenue model. Based on the results of the combined integration test and the VECM model of the public spending model, a long-term equilibrium relationship was found between model variables. The stimulus functions of the public spending model indicate that a single standard deviation shock in public spending leads to increased cash supply, inflation, and total consumption.

### CONCLUSION

Diversifying the base of the Iraqi economy, which depends mainly on oil revenues and creating an economy characterized by a gradual increase in the contribution of other economic sectors in the composition of GDP. Diversification of

the structure of public revenues in preparation for the exit from the rentire form of the Iraqi economy is crucial to protect the economy and the general budget from large fluctuations or sudden decrease in oil revenues. Accordingly, this diversification stabilizes the levels of government spending and increases its efficiency. Change the course of public spending by changing the structure of the general budget in favor of investment spending directed to expand production capacities and infrastructure to ensure the provision of market demand for goods and services. Last but not lease, the research reaches a recommendation that the Iraqi government adopt the rules of fiscal and budgetary frameworks to help release fiscal policy away from political pressures by setting certain limits for public spending, public debt and the percentage of the budget deficit.

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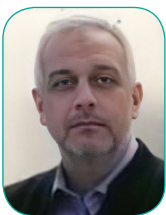
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